

Descriptions of three new species of the Dipterous genus *Sciapus* with a key to the North American species.

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In working out the following table of species, I have used Prof. J. M. Aldrich's key, published September, 1904, in the Transactions of the American Entomological Society, as a basis, but uniting under *Sciapus* the genera *Psilopdinus* and *Agonosoma* there used, as is done by most of the European authors now. This key places eighteen species not contained in that of Prof. Aldrich. Four of these were described by Mr. Coquillett, five by Mr. Bigot and nine by myself. Of these last, three are described in this paper, as follows: *novcbora-censis*, *banksii*, and *bradleii*; three in the Canadian Entomologist, *chalybeus*, *digitatus*, and *nigrimanus*; and three, *furcatus*, *leonardi*, and *pollinosus*, will be more fully described in my report of the Dolichopodidae of Okefenoke Swamp, Georgia.

Five species in this key described by Mr. Bigot seem to be recognizable; at least they seem to be distinct from all other known species from North America, but his *carolinensis* and *pallesceus* I could not do anything with. Mr. Bigot does not mention any hairs on the face of his *occidentalis*, *pampocillus* and *hirtulus*, so I take it that they have the face bare, as no doubt they have; he also states that *occidentalis* has the arista long, so I place it in the section where the arista is at least two-thirds as long as the body; the long bristles of the thorax and abdomen would indicate that it belonged there. He states that the femora of *hirtulus* are reddish with violet reflections; therefore, I take it that his specimen was somewhat immature and the femora should be blackish with violet or green reflections, as this is sometimes the case with immature specimens with dark femora. For the same reason I have placed his *occidentalis* in the group with blackish femora; he describes them as reddish brown.

Key to the North American Species of *Sciapus*.

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|---|--|----|
| 1 | Cilia of the tegulae black or dark brown | 2 |
| | Cilia of the tegulae pale | 67 |

- 2 Femora black, the tips may be yellow3
Femora yellow or mostly yellow54
- 3 Wings with dark markings4
Wings without dark markings35
- 4 Dark markings on the wings consist of two cross-bands connected
along the costa, in some immature specimens reduced to an in-
fuscation of the veins9
Dark markings otherwise5
- 5 Wings black except beyond the forking of the fourth vein and
the hind margin. (Ariz., Mex., W. I., S. Am.)...*dimidiatus* Loew
Wings mostly hyaline6
- 6 Wings with an ill-defined brownish band extending from the costa
to the posterior end of the cross-vein. (Mex.)...*infumatus* Ald.
Wings with a cloud along the anterior portion7
- 7 Middle tibiae with rather large bristles on the front surface8
Middle tibiae destitute of bristles. (Mex.)*ciliipennis* Ald.
- 8 Middle tibiae with three long, slender bristles, hind tibiae without
bristles. (Pa.)*chalybeus* V. D.
Middle tibiae with a row of about fourteen bristles, hind tibiae
with a similar row. (Mex., Cent. Am.)*cilipes* Ald.
- 9 Fore tarsi with dense black fringe on the sides of the fourth and
fifth joints, middle tarsi with the second and third joints less
broadly fringed. (Mex.)*bifimbriatus* Ald.
Fore tarsi of different structure10
- 10 Fore tibiae black11
Fore tibiae pale, at utmost brownish14
- 11 Second antennal joint with many and long bristles12
Second antennal joint with few and short bristles. (Mex.)
praestans Ald.
- 12 Last four joints of fore tarsi subequal13
These joints of gradually decreasing length. (West U. S., Mex.)
melampus Loew
- 13 Face with numerous delicate, pale hairs. (U. S.)...*patibulatus* Say
Face bare. (West U. S.)*pilicornis* Ald.
- 14 Fore tarsi yellow, not or but little infuscated towards the tips..15
Fore tarsi infuscated, part of the first joint may be yellow17
- 15 Abdomen with two long, wavy, hair-like bristles on the sides at
tip. (Mex., Guatemala.)*forcipatus* Ald.
Abdomen without such bristles16
- 16 Middle tarsi black, fourth and fifth joints with narrow silvery
fringe above. (Mex., Brazil.)*diffusus* Wied.
Middle tarsi but little infuscated and with the fourth joint pure
white. (W. I., Mex., Brazil.)*bellulus* Ald.

- 17 Knob of the halteres infuscated18
 Knob of the halteres yellow23
- 18 Middle and hind tibiae entirely black19
 At least the middle tibiae largely yellow20
- 19 Middle metatarsi ciliated above. (Cuba.)*pilosus* Loew
 Middle metatarsi not ciliated. (Mex.)*inornatus* Ald.
- 20 Last four joints of hind tarsi regularly decreasing in length.
 (W. I., Brazil.)*jucundus* Loew
 These joints not regularly decreasing, the last two or three being
 subequal21
- 21 Last two joints of hind tarsi subequal and a little swollen. (Mex.)
atricauda Ald.
 Last three joints subequal and a little flattened22
- 22 Last three joints of hind tarsi glabrous, middle metatarsi as long
 as their tibiae. (Mex., Brazil.)*triseriatus* Ald.
 Last three joints of hind tarsi hairy, middle metatarsi longer than
 their tibiae. (Ga.)*leonardi* V. D.
- 23 Apical third of fore coxae with trochanters and base of femora
 yellow. (Mex.)*coxalis* Ald.
 Not more than the extreme apex of fore coxae yellow24
- 24 Third antennal joint large.....25
 Third antennal joint small or of moderate size.....26
- 25 Second antennal joint with long bristles. (Mex.)*astequinus* Bigot
 Second antennal joint with short bristles. (Mex.)*purpuratus* Ald.
- 26 Second antennal joint with short bristles.....27
 Second antennal joint with long bristles30
- 27 Middle tibiae with a row of bristles on the lower front surface ex-
 tending the whole length28
 Middle tibiae with not over four bristles at most in the same longi-
 tudinal line29
- 28 Fore metatarsi with a row of erect bristles below, second joint
 without bristles. (Guatemala.)*nigrimanus* V. D.
 Fore metatarsi with a few bristles near tip, second joint with a
 row of small bristles below. (Mex.)*genualis* Ald.
- 29 Bristles on the second joint of the antennae shorter than the diame-
 ter of that segment. (Mex.)*breviseta* Coq.
 Bristles on second joint about as long as the antennae. (Cuba.)
digitatus V. D.
- 30 Middle tibiae with a row of stout bristles on the outer side, middle
 metatarsi ciliated. (Mex., Brazil.)*triseriatus* Ald.
 Middle tibiae with not over four bristles in a row, middle meta-
 tarsi not ciliated31
- 31 Last two joints of hind tarsi flattened32
 Last joints of hind tarsi not flattened33

- 47 Costa with erect cilia48
 Costa without erect cilia49
- 48 Second joint of fore tarsi shorter than any of the following joints.
 (U. S.)*mundus* Wied.
 Second joint longer than any following. (Mex.)*hirtipes* Ald.
- 49 Middle metatarsi with erect cilia above. (Mex.)*ciliipes* Ald.
 Middle metatarsi not so ciliated50
- 50 Middle tibiæ black51
 Middle tibiæ yellow52
- 51 All tibiæ black, fore tarsi with second and third joints subequal,
 fourth and fifth longer but also subequal. (Western States.)
pilicornis Ald.
 Fore tibiæ yellow, last four joints of fore tarsi regularly decreasing
 in length. (U. S., W. I.)*chrysoprasius* Walk.
- 52 Hypopygium large, its appendages large, curved, forceps-like;
 abdomen with two long wavy bristles at tip. (Mex.)
forcipatus Ald.
 Hypopygium small or only moderately large, abdomen without
 long bristles at tip53
- 53 Hind tibiæ and halteres yellow. (Hayti.)*hirtulus* Bigot
 Hind tibiæ and halteres infuscated. (Mex.)*purpureus* Ald.
- 54 Wings with dark markings55
 Wings wholly hyaline63
- 55 Antennæ yellow. (Mex., Brazil.)*basilaris* Wied.
 Antennæ black56
- 56 Hyaline space between the cross-bands reaching forward to the
 second vein57
 Hyaline space not reaching beyond the third vein59
- 57 First joint of the fore tarsi white at tip, the following joints black,
 fourth fringed with black hair above. (Mex.)*interceptus* Ald.
 Fore tarsi plain, gradually infuscated58
- 58 Fore coxæ black. (Mex.)*pennifer* Ald.
 Fore coxæ yellow. (Mex.)*flavicoxa* Ald.
- 59 Second and third joints of fore tarsi stout, swollen, bristly. (Mex.)
clavipes Ald.
 Fore tarsi plain or only bristly60
- 60 Fore coxæ green. (La.)*viridicoxa* Ald.
 Fore coxæ pale61
- 61 Middle metatarsi with a row of erect cilia on the front surface.
 (U. S.)*scaber* Loew
 Middle metatarsi plain62
- 62 Middle tibiæ with a row of bristles on the front surface. (U. S.)
sipho Say
 Middle tibiæ with only scattered bristles. (Ga., Fla.) .*furcatus* V. D.

- 63 Face with numerous pale hairs64
 Face bare65
- 64 Fifth joint of all the tarsi black, fifth joint of hind tarsi cylindrical. (U. S.)*flavipes* Ald.
 Fifth joint of fore and middle tarsi whitish, last joint of hind tarsi a little flattened and orbicular in outline. (N. Y., Va.)
banksii Ald.
- 65 Middle metatarsi greatly elongated, ciliated. (W. I.)
insularis Ald.
 Middle metatarsi plain66
- 66 Face and front green, antennæ black, fore femora entirely yellow. (Mex.)*tonsus* Ald.
 Face and front violet, antennæ reddish brown, arista long, fore femora blackened at base. (Hayti.)*pampocillus* Bigot
- 67 Antennæ entirely black68
 Antennæ yellow, at least at base71
- 68 Coxæ and base of femora black. (Hayti.)*polycroma* Bigot
 Femora and fore coxæ wholly yellow69
- 69 Coxæ yellow, middle pair blackened at base, costa with a notch before the tip of the second vein. (Ga., Fla.)*costalis* Ald.
 Fore coxæ yellow, middle and hind coxæ black, costa without a notch70
- 70 Very bright and shining, hypopygium large with black appendages. (U. S.)*scintillans* Loew
 Duller with grayish pollen, hypopygium small with the appendages partly yellow. (Ga.)*pollinosus* V. D.
- 71 Dorsum of the thorax yellow with a green or blue stripe72
 Dorsum wholly metallic73
- 72 Pleuræ yellow, middle tibiæ and metatarsi with erect cilia. (W. I.)
flavidus Ald.
 Pleuræ with an indistinct dark spot, tarsi plain. (W. I.)
dorsalis Loew
- 73 Thoracic dorsum opaque, pollinose. (East U. S.)...*pallens* Loew
 Thoracic dorsum shining74
- 74 Middle coxæ infuscated on the outer side for at least half their length75
 Middle coxæ wholly or almost wholly yellow80
- 75 Costa of the male with erect cilia76
 Costa of the male without such cilia77
- 76 Costa with an angular projection near the tip. (Southern States.)
psittacinus Loew
 Wing of the male flattened in outline at apex but the front corner rounded. (Ga.)*bradleyi* n. sp.

- 77 Middle femora of male shortened, dark at base, their tibiae and tarsi very much elongated78
 Middle femora normal79
- 78 Middle tarsi with the last three joints much flattened. (N. Y.)
noveboracensis n. sp.
 Middle tarsi plain. (Eastern States.)*filipes* Loew
- 79 Abdomen yellow at base above, thorax coppery or golden on the sides of the dorsum. (East U. S., W. I.)*variegatus* Loew
 Abdomen not pale at base, thorax green, more bluish-green along the front. (Cuba)*castus* Loew
- 80 Fore femora with slender erect bristles below. (U. S.)
tener Loew
 Fore femora without such bristles81
- 81 Hind margin of the pleuræ yellow82
 Hind margin of the pleuræ green. (Mex.)*mexicanus* Ald.
- 82 Abdomen with basal yellow band, remainder green. (U. S.)
unifasciatus Say
 Abdomen with the greater part of the first four segments yellow. (U. S.)*rotundiceps* Ald.

Sciapus dimidiatus Loew.

I have seen seven males of this species from Arizona. The tibiae were more brown than yellow, especially the hind ones;



Fig. 1.—Wing of *Sciapus dimidiatus* Loew.

the hyaline tip to the wing is not over one-third the length of the wing, reaching just to the forking of the fourth vein (Fig. 1); the tegulae are entirely black, instead of being bordered with black, as Loew states; the outer appendages of the hypopygium are pointed lamellae, and are of a blackish color with rather long hairs on the inner edges. These differences are probably only individual.

Sciapus banksii n. sp.

Face with white hairs; antennæ, cilia of the tegulae and middle and hind coxæ black; fore coxæ and all the legs yellow; fifth joint of fore and middle tarsi white; wings hyaline. Length 4 mm.

♂. Face and front metallic green with yellowish brown pollen which does not conceal the ground color; face with slender white hairs; antennæ black; arista about two-thirds as long as the width of the head.

Thorax and abdomen metallic green, in some individuals more blue green, except the posterior half of the abdomen, which is golden green;

hypopygium very small with concealed appendages; incisures of the abdomen narrowly black; bristles of the thorax of moderate length, those of the abdomen short; pleuræ greenish black.

Fore coxæ yellow; middle and hind coxæ black; trochanters, femora, tibiæ and tarsi yellow; fore and middle tarsi a little darker towards the tips and with the fifth joints white; hind tarsi blackened from the tip of the first joint, about three-fourths as long as their tibiæ, first joint nearly as long as the remaining four joints together, fourth shorter than the fifth, about as broad as long, fifth a little flattened, nearly orbicular in outline, deep black; middle and hind tibiæ with a small bristle on the basal third; hind tibiæ and tarsi with rather long hairs.

Halteres yellow; tegulæ brown with black cilia.

Wings hyaline, only slightly tinged with gray; venation as in *S. flavipes* Ald.

♀. Two females taken with the males described above have the face more blackish; fifth joint of fore and middle tarsi are not white; hind tarsi normal; the abdomen more golden green than in the male.

Described from three males and two females taken by Mr. Nathan Banks, at Falls Church, Virginia, July 4th and 6th. He took one male at Sea Cliff, Long Island, New York. Type in the collection of Mr. Nathan Banks.

This interesting little species, which I dedicate to its captor, could easily be mistaken for *S. flavipes* Ald. which it resembles in size and color, but in that species the fifth joint of all the tarsi is black, while in this species the fore and middle tarsi have the fifth joint white, contrasting with the darker joints which precede them; the hind tarsi do not have the fifth joint flattened as in this species. I think it would be difficult to separate the females of the two species.

***Sciapus bradleii* n. sp.**

First two joints of the antennæ yellow; abdomen with yellow at base; wings with the apex flattened in outline and with the front apical corner rounded; costa with erect cilia. Length 4.5 mm.

♂. Face and front metallic green, the former thickly covered with white pollen; palpi, proboscis and two basal joints of the antennæ yellow, the third joint of the antennæ small, rounded, brown; arista about as long as the width of the head.

Thorax dark metallic green, with grayish pollen; pleuræ more blackish green with white pollen; scutellum blue green with two strong bristles inserted widely apart.

Abdomen paler green and dull with pollen, the venter and some of the incisures yellow, first segment largely yellow, last three segments with coppery reflections; hypopygium small, mostly concealed, with the rather long outer appendages yellow.

Legs and coxæ pale yellow; middle coxæ blackish on the outer surface for half their length; middle femora with one slender black bristle near the tip on the hind edge, and a few black hairs on the upper hind edge towards the tip; middle femora, tibiæ and metatarsi of about equal length; middle tibiæ with a slender bristle close to the tip, this bristle fully twice as long as the diameter of the tibiæ; middle tibiæ and metatarsi with long hair; hind tarsi as long as their tibiæ and black from the extreme tip of the first joint.

Cilia of the tegulæ white.

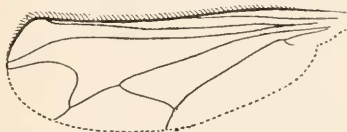


Fig. 2.—Wing of *Sciapus bradleyi* n. sp.

Wings with the front apical corner rounded, the second vein entering the costa before this rounding begins, second vein running close to the costa and parallel with it for some distance before entering it; costa with erect cilia which are longest at the tip of the second vein, rapidly decreasing in length beyond this point. (Fig. 2.)

Described from one male from St. Simon Island, Georgia, taken about the first of May, by Dr. J. C. Bradley. Type in the Cornell University collection.

***Sciapus noveboracensis* n. sp.**

Two basal joints of the antennæ yellow; hypopygium large with long appendages; femora mostly yellow; middle tibiæ extraordinarily long and slender; middle tarsi flattened and contorted; cilia of the tegulæ white. Length 6 mm.

♂. Face and front metallic green with yellow pollen, the pollen more whitish on the lower part of the face; antennæ short, the two basal joints yellow, third joint black; arista black, inserted near the base of the third joint, hardly as long as the width of the head.

Dorsum of the thorax dark metallic greenish blue with thin yellowish pollen; pleuræ green with white pollen; bristles of the thorax rather long.

Abdomen metallic green, thinly covered with yellowish pollen, and with black incisures, with a few long yellow hairs at base above, and with about six black bristles near the hind margin of the segments; hairs on the venter rather long and white; hypopygium large, black, with long appendages which are yellow towards their tips.

Middle and hind coxæ black. Fore coxæ yellow with long white

hairs on the front surface; fore femora short, pale yellow, with a few long pale bristles below near the base; fore tibiae yellow, longer than their femora, short-haired; fore tarsi long and slender, blackened almost from the base, the metatarsi one and one-fourth times as long as their tibiae, remaining joints taken together only about one-third

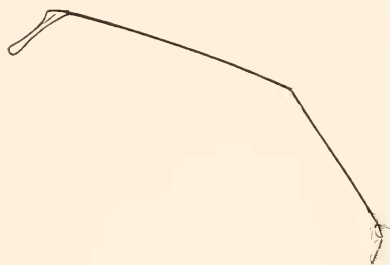


Fig. 3.—Middle leg of *Sciapus noveboracensis* n. sp.

as long as the first. Middle legs extremely slender (fig. 3), femora rather short, of normal size at base but tapering rapidly so as to be very slender in the middle, the knee large and contorted; middle femora black at base, pale yellow from before the middle; middle tibiae extremely long and slender, over 5 mm. long, wire-like, black except extreme base, glabrous; middle metatarsi still more slender, two-thirds as long as their tibiae with a row of short spines below towards the tip, black; second joint black, slender but short, with long hairs above; third joint short, flattened, widened at tip, fringed with long hairs on one edge; fourth joint short, flattened, wider than the third, bent or twisted, with only a few short hairs; fifth joint short, yellow at base and black at tip, bent, not so greatly flattened as the two preceding joints; third and fourth joints yellow. Hind femora yellow, long and slender with a few long yellow hairs above at base; hind tibiae a little longer than their femora; hind tarsi shorter than the hind femora, black from before the middle of the first joint, first joint longer than the remaining four together, somewhat thickened in the middle.

Halteres yellowish; tegulae pale yellow with a narrow black tip and with long white cilia.

Wings grayish hyaline, long and rather narrow.

♀. Length 4 mm. Differs from the male in having the pollen of the face silvery white; thorax and abdomen covered with an equally thick coat of coarse yellowish pollen; all legs normal; all tarsi blackened from the base of the second joint.

Described from one male and one female, taken at Gowanda, New York, June 8th. Type in the author's collection.

This belongs to the same group of species as *S. tener* and *filipes* of Loew, the middle legs of which are slender; the hypopygium is formed about alike in all three species and the wings are also very much alike.